

Subject: INFO-HAMS Digest V89 #887  
To: INFO-HAMS@WSMR-SIMTEL20.ARMY.MIL

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Today's Topics:

Letter from the FCC: 20M Maritime Mobile Net (2 msgs)  
Question about Ace Communications in Indianapolis  
SuperDF Principle of Operation

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Date: 15 Nov 89 14:51:37 GMT  
From: asuvax!anasaz!john@handies.ucar.edu (John Moore)  
Subject: Letter from the FCC: 20M Maritime Mobile Net

In article <18209@bellcore.bellcore.com> karn@jupiter.bellcore.com (Phil R. Karn) writes:

]   
] John De Armond makes some excellent on-the-mark points, even if he   
] speaks a bit stridently.   
]   
] Like it or not, modern radios make it possible for almost anyone can be   
] trained in a matter of minutes to operate them. But these same   
] developments have greatly increased the gap between the skills necessary   
] to merely operate a radio and the skills necessary to effectively design,   
] manage and maintain complete communication \*systems\*.

Well... there is another place where we provide significant value to emergency agencies: excess capacity. In spite of what John De Armond says, most emergency agencies do not have the budget to build their own communications system which has enough capacity for a major disaster. Here in AZ, we have many linked repeater systems that cover a wide range of territory. Many of these are hardened against disaster, with EMP protection and emergency power. These provide a very useful supplement to the systems in place for government use. Those systems, with the exception of one that the national guard uses, are loaded near capacity without a disaster. The national guard system was designed and built by hams (myself included), and the national guard sponsors, and considers very valuable, a communications auxilliary, composed strictly of hams, that operates on this network (although it is on military, not amateur frequencies).

The national weather service Skywarn system (yes, we have weather in AZ, including tornadoes, winter storms and flash floods) is dependent on hams and our repeater systems. There is no way the NWS could fund such a communications system - they have enough trouble buying a PC. We provide statewide communications for

them during emergencies, independent of the phone system, and at no cost (other than a scanner they bought to be able to monitor us). Northlink, which is owned by 7 of us, is currently putting a repeater near Yuma, at the express request of NWS. They got us a free site, we provide the repeater.

My experience operating during disasters and drills is that the hams provide a very useful function. We normally don't handle the highest priority traffic - existing systems do that (with the exception of NWS). We do provide primary communications for disaster shelters, for red cross vehicles (during a disaster they don't have enough vans with red cross frequencies in them), etc. We also have historically been used to plug the gaps in interagency coverage. Let me give an example:

During the floods of the early '80's, a community called Rainbow Valley was cut off from the rest of the world. There were no police or fire officials there (this place is pretty remote), but there were some hams. The hams contacted us at EOC and advised us that there were food shortages, and that power outages threatened the lives of some residents. The national guard was tasked to provide food and generators. A ham had to go along on the helicopter to communicate with the hams who had set up an LZ (these hams had previously set up LZ's in VietNam and knew what they were doing). During those same floods, we had other communities that were cut off and only local hams provided communications. We had a military radar station that was surrounded by flood water and could only communicate via ham radio to get evacuated (they lost their local com).

Having personally participated as net control on the Hurricane Watch Net during Gilbert, Hugo, Joan, and other disasters, I KNOW that our communications saved lives, and provided com where no other was available. One little example: after Gilbert ravages the Cayman Islands, the British warship Archer was first on the scene. They needed to dispatch a rescue helicopter as soon as they were in flight range. Only ham radio provided the link. They came up on 14.325 as Warship Archer and asked for our help. We put them in touch (relayed through myself, due to propagation) with the appropriate hams in the Caymans who directed their flight.

I could provide a lot more examples. I think John De Armond has too narrow a perspective on emergency communications. Ham radio may not be right for his situation, but it is certainly valuable in many.

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John Moore (NJ7E)                      mcdphx!anasaz!john asuvax!anasaz!john  
(602) 861-7607 (day or eve) long palladium, short petroleum



> So my question is: Has anybody had any bad experiences with these  
> folks, and / or can someone give me any information pertaining to  
> the AR 800, AR 900, or AR950??

AOR scanners have been plagued by feature and performance problems, so  
I avoid buying them.

Instead of the AR-900 portable, I recommend the Uniden/Bearcat 200xlt,  
or Radio Shack PRO-34 as a lagging second.  
Instead of the base/mobile AR-950, I recommend the Radio Shack PRO-2005  
or Uniden/Bearcat 760xlt.

Grove Enterprises (Brasstown, NC) has good prices, as does  
National Tower (Shawnee Mission, KS).

If you have enough money, by all means get a Radio Shack PRO-2005  
from a discounter like Grove -- not from Radio Shack unless it  
is on sale.

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Bob Parnass, AJ9S - AT&T Bell Laboratories - att!ihuxz!parnass (312)979-5414

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Date: 15 Nov 89 04:34:41 GMT  
From: asuvax!anasaz!john@handies.ucar.edu (John Moore)  
Subject: SuperDF Principle of Operation

Sorry to keep posting about the SuperDF, but I just got two email  
requests to post the principles of operation of the SuperDF.

The unit has two identical dipoles, which are alternately connected  
to an FM receiver through switching diodes. If the antennas are at  
equal distance from the source (ie the bearing to the source is  
perpendicular to the line between the antennas), essentially  
nothing happens to the signal when the antennas are switched. However,  
when one antenna is closer than the other, a positive phase shift  
is generated when switching to one antenna, and a negative when  
switching to the other. When this phase modulated signal is  
fed to an FM receiver, it results in positive or negative  
pulses, somewhat delayed from the time of switching. The SuperDF  
uses a synchronous detector (essentially a switch between the  
signal and the signal inverted) to convert the pulses to the  
same polarity, then uses a narrow sampling window to grab the  
peak of each pulse, which is then applied to a filter. The output  
of the filter is a signal whose polarity depends on which antenna  
is closer to the signal (thus resolving the 180 degree bearing

ambiguity you would expect from two antennas), and whose amplitude is non-linearly related to how far off center the bearing is. The polarity of this signal is used to either driver LED's or a variable frequency oscillator. These are used by the operator to determine which way (if any) to turn the antenna.

[PS to KA6S - yes, it is similar to the Double Ducky, but is a much improved design. The trick you mentioned may work, but the filter is very narrow, giving either a 10Hz or a 1Hz bandwidth, which makes it pretty tough!]

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7525 Clearwater Pkwy, Scottsdale, AZ 85253  
The 2nd amendment is about military weapons, NOT JUST hunting weapons!

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End of INFO-HAMS Digest V89 Issue #887

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